

## REMARKS

### **I. The Summary Of the Office Action**

The summary page of the office action indicated that claims 39, 41-48, and 62-67 are pending; that claims 66 and 67 are allowed; that claims 39-42 and 65 are rejected, and that claims 43-48 and 62-64 are objected to. The applicant agrees that the summary reflects the body of the office action and the status of the claims.

This amendment adds claims 68-74 including one independent in excess of three and three claims in excess of 20. The small entity fee of \$100 per independent claim in excess of three and \$25 per each claim in excess of 20 totals \$175. The fees are paid via EFS web credit card submission with the filing of this amendment.

### **II. The Rejections of Claims 39, 41, 42, and 65 under 35 USC 103(a) as Being Unpatentable over Howland et al. USP 5,928,471 (hereinafter "Howland")**

The examiner rejects claims 39, 41, 42, and 65 as obvious based upon Howland.

#### **A. What Howland Teaches**

Howland is directed to "Security features for paper." Title. It discloses "a method of making paper and transparentising selected areas of paper to provide enhanced security features. The invention thus provides a method of making paper comprising the step of depositing fibers (12) onto a support surface (13) to form a porous absorbent sheet (14), applying a transparentising resin to at least portion of said porous sheet and subsequently impregnating the porous sheet with a sizing resin." Abstract.

Howland discloses that its novel process differs from the prior art in that it screen prints a "transparentising resin" onto defined regions of the surface of the partially formed paper sheet 14 prior to passing sheet 14 through a size bath 18. (The size bath saturating the paper so it is no longer porous.) Detailed Description paragraphs 4 and 5. Howland indicates that the sizing resin in the bath fills the regions other than the regions containing the transparentising resin.

Howland also teaches applying the transparentising resin to a low grammage part of the paper, to a decorative watermark 29 part of the paper, and to a streak in the paper. Howland also

teaches that a dye may be added to the transparentising resin to provide a dyed region, and that the dye may be fluorescent. Howland also teaches embossing the region including the transparentising resin. Finally, Howland provides various examples of resins and dyes.

**B. What Howland Does Not Teach**

Howland does not disclose electrically conductive polymer layer materials. Howland does not disclose PEDT/PSS, and it does not disclose applying PEDT/PSS to a wet pulp state of paper.

**C. Differences Between Howland and Independent Claim 39**

In contrast, claim 39 recites "applying to said sheet material while said sheet material is in said wet pulp state a pattern of PEDT/PSS."

Regarding PEDT/PSS, this application describes the "use of the electrically conductive substance in the foil structure to be included in a paper pulp line" in discussing Figs. 11-14. Page 13 lines 1-3. This section describes a foil structure to be included in a paper pulp line, including a support foil for example of polypropylene, a metallization 29, and demetallized sections having defined shapes, such as letter shapes. This section describes the obverse (opposite) side of the support foil having thereon the *electrically conductive polymer PEDT/PSS* (polyethylene dioxythiophene polystyrene sulfonate) layer 30. Preferably of a thickness of only 1-2 microns. Regarding this layer 30, the specification teaches on page 14 that:

The other layer 30, however, is flexible and elastic and, compared to the metallization 29, is of a much higher ductility or expandability with respect to the surface structure of the support foil 28. Even when a bank note, for instance, is bend, creased or folded there will result not interruption or discontinuation of the further layer 30. Hence, the testing devices installed, for instance, in automatic teller machines will now derive for predetermined sections for the security element a value of conductivity from the metallization 29 provided in accordance with the state of the art, including any possible hairline fractures and from the relatively high-ohmic layer 30 connected in parallel to the metallization 29.

Accordingly, the specification explains that "applying to said sheet material while said sheet material is in said wet pulp state a pattern of PEDT/PSS" *provides the benefit of maintaining relatively uniform sheet conductivity even when the other less malleable conductive layer develops cracks.*

**D. Why Howland Does Not Suggest Claim 39**

Nothing in Howland suggests such a benefit (reducing of changes in conductivity due to cracks in metallizations). Nothing in Howland suggests using PEDT/PSS. Neither this specification nor Howland suggest substituting PEDT/PSS for conventional metallic layers. Accordingly, there is no basis to conclude that Howland suggests what independent claim 39 defines; including a layer of PEDT/PSS. Therefore, the rejection of claim 39 for obviousness based upon Howland is improper and should be withdrawn.

**E. Response to the Examiner's Argument**

The examiner argues that "It would have been obvious to a skilled artisan to provide the method of [Howland] with the step of using a PEDT/PSS since no new or unexpected result would occur from this substitution." However, that is incorrect for two reasons. First, the examiner applies a legally incorrect test for obviousness. The test the examiner applied is that something is obvious because no unexpected result occurs. The correct test is that something is obvious when it is suggested by the prior art. Nothing in Howland suggests applying a layer of PEDT/PSS, and therefore claim 39 is non-obvious.

PEDT/PSS is disclosed in this application as being "flexible and elastic and, compared to the metallization 29, is of a much higher ductility or expandability with respect to the surface structure of the support foil 28." Nothing in Howland suggests those relative properties for PEDT/PSS, and therefore nothing in Howland suggests applying a layer of PEDT/PSS.

For all of the foregoing reasons, the rejection of claim 39 should be withdrawn.

#### F. **The Remaining Rejected Claims**

For at least the same reasons, the rejections of claims 41, 42, and 65 should be withdrawn.

As to the rejected dependent claims, the examiner's assertion that "the various combinations and locations of elements claimed would have been obvious matter of design choice to a skilled artisan" is official notice contrary to the requirements of MPEP 2144.03(A). The MPEP is binding on the examiner. MPEP 2144.03 (A) states "Determine When It Is Appropriate To Take Official Notice Without Documentary Evidence To Support The Examiner's Conclusion" followed by:

It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known. For example, assertions of technical facts in the areas of esoteric technology or specific knowledge of the prior art must always be supported by citation to some reference work recognized as standard in the pertinent art. *In re Ahlert*, 424 F.2d at 1091, 165 USPQ at 420-421. [Emphasis in original.]

All of the facts asserted by the examiner without citation to evidence clearly are not capable of such instant and unquestioned demonstration. The examiner's omission in citing appropriate prior art therefore is improper and not sustainable upon appeal.

#### III. **New Claims 68-75**

New dependent claims 68-72 define the existence of a metallization on a side of a sheet opposite the PEDT/PSS layer, thickness dimensions of the PEDT/PSS layer, and the various layer configurations shown in Figs. 11-14.

New independent claim 73 defines a pattern of an electrically conductive material instead of a pattern of PEDT/PSS. New dependent claims 74 and 75 define the methods of making the structures shown in Figs. 11-14.

The new claims are non-obvious over Howland for the same reasons presented for the pre-existing claims.

In view of the foregoing, this applicaiton is believed to be in condition for allowance, which his requested.

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Date

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